

In the Claims

1. (Currently amended) A communications system comprising:

a gateway operable to receive a first packet addressed to a mobile unit, to determine a multicast address associated with the mobile unit, to generate a second packet having information from the first packet and addressed to the multicast address, and to communicate the second packet to a packet network; ~~and~~

a plurality of base transceiver stations each operable to receive the second packet from the packet network, to determine the mobile unit identified by the second packet, and to communicate information from the second packet to the mobile unit; and

a roam management module operable to monitor, for each of the base transceiver stations, a wireless link between the mobile unit and the base transceiver station, to determine that radio link quality of the wireless link for a first one of the base transceiver stations has fallen below a first threshold, and to withdraw the first one of the base transceiver stations from a multicast group associated with the mobile unit, the roam management module further operable to determine that radio link quality for the wireless link between a second one of the base transceiver stations and the mobile unit has exceeded a second threshold and to register the second one of the base transceiver stations with the multicast group.

2. (Original) The system of Claim 1, wherein the first packet contains voice information for a communications session between the mobile unit and a remote device generating the voice information.

3. (Original) The system of Claim 1, wherein the base transceiver stations each transmit information from the second packet to the mobile unit to facilitate soft handoff of a communications session.

4. (Original) The system of Claim 1, wherein the gateway is further operable to generate the second packet by readdressing the first packet to the multicast address.

5. (Canceled)

6. (Currently amended) The system of ~~Claim 5~~ Claim 1, wherein the roam management module is further operable to:

direct the ~~selected~~ first base transceiver station to discontinue communications with the mobile unit; and

direct the mobile unit to discontinue communications with the ~~selected~~ first base transceiver station.

7. (Currently amended) The system of ~~Claim 5~~ Claim 1, wherein the roam management module determines that radio link quality of the wireless link for the first one of the base transceiver stations has fallen below a the first threshold by determining that a signal strength has fallen below the first threshold for a predetermined period of time.

8. (Canceled)

9. (Currently amended) The system of ~~Claim 8~~ Claim 1, wherein the roam management module is further operable to

direct the ~~selected~~ second base transceiver station to communicate with the mobile unit; and

direct the mobile unit to communicate with the ~~selected~~ second base transceiver station.

10. (Currently amended) A base transceiver station comprising:
a network interface operable to receive multicast packets from a packet network, wherein the base transceiver station is a member of a multicast group receiving the multicast packets;

a processor operable to determine a mobile unit identified by the multicast packets, to monitor radio link quality for a wireless link with the mobile unit, and to withdraw from the multicast group based on the radio link quality, the processor further operable to monitor radio link qualities for wireless links with a plurality of mobile units and to register for a multicast group associated with a selected one of the mobile units based on the radio link quality for the wireless link with the selected one of the mobile units; and

a wireless interface operable to communicate information from the multicast packets to the mobile unit.

11. (Original) The base transceiver station of Claim 10, wherein:
the processor is further operable to extract packets encapsulated by the multicast packets; and

the wireless interface is further operable to communicate the extracted packets to the mobile unit.

12. (Original) The base transceiver stations of Claim 11, wherein the encapsulated packets each comprises an Internet protocol (IP) address of the mobile unit.

13. (Original) The base transceiver station of Claim 10, wherein the information from the multicast packets comprises voice information associated with a communications session.

14. (Canceled)

15. (Canceled)

16. (Original) The base transceiver station of Claim 10, wherein the base transceiver station is one of a plurality of base transceiver stations communicating with the mobile unit using code division multiple access (CDMA) communications protocols, wherein the base transceiver stations are each registered for the multicast group.

17. (Currently amended) A gateway comprising:
a first interface operable to receive a first packet addressed to a mobile unit;
a processor operable to determine a multicast address associated with the mobile unit and to generate a second packet addressed to the multicast address, the second packet encoding information from the first packet, and wherein the multicast address corresponds to a multicast group having a plurality of base transceiver stations as members, each of the base transceiver stations in the multicast group having a wireless link with the mobile unit and a radio link quality of the wireless link that exceeds a threshold; and
a second interface operable to communicate the second packet to a packet network.

18. (Canceled)

19. (Original) The gateway of Claim 17, further comprising a memory storing information associating a plurality of mobile units to multicast addresses.

20. (Original) The gateway of Claim 17, further operable to generate the second packet by readdressing the first packet to the multicast address.

21. (Original) The gateway of Claim 17, further operable to generate the second packet by encapsulating the first packet as a payload of the second packet.

22. (Currently amended) A method for processing multicast packets comprising:
registering for a multicast group associated with a mobile unit;
receiving multicast packets for the multicast group; ~~and~~
communicating information from the multicast packets to the mobile unit using
wireless communications protocols;
monitoring radio link quality for a wireless link with the mobile unit;
withdrawing from the multicast group associated with the mobile unit based on the
radio link quality;
monitoring, for each of a plurality of unregistered mobile units, a radio link quality for
a wireless link with the unregistered mobile unit; and
registering for a multicast group associated with a selected one of the unregistered
mobile units based on the radio link quality of the wireless link with the selected unregistered
mobile unit.

23. (Original) The method of Claim 22, further comprising extracting packets
encapsulated by the multicast packets and communicating the extracted packets to the mobile
unit.

24. (Original) The method of Claim 23, wherein the encapsulated packets each
comprises an Internet protocol (IP) address of the mobile unit.

25. (Original) The method of Claim 22, wherein the information from the
multicast packets comprises voice information associated with a communications session.

26. (Canceled)

27. (Canceled)

28. (Original) The method of Claim 22, wherein the base transceiver station is one of a plurality of base transceiver stations communicating with the mobile unit using code division multiple access (CDMA) communications protocols, wherein the base transceiver stations are each registered for the multicast group.

29. (Currently amended) Software for processing multicast packets, the software embodied on a computer readable medium and operable to:

register for a multicast group associated with a mobile unit;
receive multicast packets for the multicast group; ~~and~~
communicate information from the multicast packets to the mobile unit using wireless communications protocols;

monitor radio link quality for a wireless link with the mobile unit;
withdraw from the multicast group associated with the mobile unit based on the radio link quality;

monitor, for each of a plurality of unregistered mobile units, a radio link quality for a wireless link with the unregistered mobile unit; and

register for a multicast group associated with a selected one of the unregistered mobile units based on the radio link quality of the wireless link with the selected unregistered mobile unit.

30. (Original) The software of Claim 29, further operable to extract packets encapsulated by the multicast packets and communicating the extracted packets to the mobile unit.

31. (Original) The software of Claim 30, wherein each of the encapsulated packets comprises an Internet protocol (IP) address of the mobile unit.

32. (Original) The software of Claim 29, wherein the information from the multicast packets comprises voice information associated with a communications session.

33. (Canceled)

34. (Canceled)

35. (Original) The software of Claim 29, wherein the base transceiver station is one of a plurality of base transceiver stations communicating with the mobile unit using code division multiple access (CDMA) communications protocols, wherein the base transceiver stations are each registered for the multicast group.

36. (Currently amended) A base transceiver station comprising:
means for registering for a multicast group associated with a mobile unit;
means for receiving multicast packets for the multicast group; ~~and~~
means for communicating information from the multicast packets to the mobile unit using wireless communications protocols;
means for monitoring radio link quality for a wireless link with the mobile unit;
means for withdrawing from the multicast group associated with the mobile unit based on the radio link quality;
means for monitoring, for each of a plurality of unregistered mobile units, a radio link quality for a wireless link with the unregistered mobile unit; and
means for registering for a multicast group associated with a selected one of the unregistered mobile units based on the radio link quality of the wireless link with the selected unregistered mobile unit.

37. (Original) The base transceiver station of Claim 36, further comprising means for extracting packets encapsulated by the multicast packets and means for communicating the extracted packets to the mobile unit.

38. (Original) The base transceiver station of Claim 37, wherein the encapsulated packets each comprises an Internet protocol (IP) address of the mobile unit.

39. (Original) The base transceiver station of Claim 36, wherein the information from the multicast packets comprises voice information associated with a communications session.

40. (Canceled)

41. (Canceled)

42. (Original) The base transceiver station of Claim 36, wherein the base transceiver station is one of a plurality of base transceiver stations communicating with the mobile unit using code division multiple access (CDMA) communications protocols, wherein the base transceiver stations are each registered for the multicast group.